CDP-L3

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM25C-5BD20
Optical Pick-up Type	BU-5BD20

SPECIFICATIONS

Compact disc player

Laser
Semiconductor laser (λ = 780 nm)
Emission duration: continuous

Laser output
Max 44.6 μW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.

Frequency response 2 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio More than 110 dB
Crosstalk More than 100 dB
Harmonic distortion Less than 0.003%
Channel separation More than 105 dB

Outputs

ANALOG LINE OUT (Balanced output)
XLR × 2 (balanced)
Load impedance: Over 10 kilohms
Maximum output level: +24 dB* – +6 dB* (at 50 kilohms, variable)

ANALOG LINE OUT
Phono jacks × 2 (unbalanced)
Load impedance: Over 10 kilohms
Maximum output level: +8 dB* (at 10 kilohms)

PHONES
Stereo phone jack
Maximum output level: 28 mW (at 32 ohms, variable)

* 0 dB = 0.775 V

General

Power requirements

Where purchased	Power requirements
U.S.A., Canada	120 V AC, 60 Hz
Europe	230 V AC, 50/60 Hz

Power consumption 14 W
Dimensions (approx.) (w/h/d) 430 × 110 × 295 mm (17 × 4 3/8 × 11 5/8 in.) incl. projecting parts
Mass (approx.) 4.1 kg (9 lbs 1 oz)

Supplied accessories

- AC power cord (1)
- Audio connecting cord (1)
- Remote commander (remote) RM-DL3 (1)
- Sony SUM-3 (NS) batteries (2)
- Rack mount adaptors (2)
- Screws (M5 × 12) (2)
- Decorative washers (4)
- Decorative panel (1)
- Tapping screw (3 × 8) (4)
- Operating instructions (1)
- Warranty card (U.S.A. and Canadian models only) (1)

Design and specifications are subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY®

The following caution label is located inside of the unit.

CAUTION	: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL:	USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING	: LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÄD OCH SPÄRREN ÄR URKOPPLAD.
ADVERSEL:	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Section Title Page

SECTION 1. SERVICING NOTE 3

SECTION 2. GENERAL 4

SECTION 3. DISASSEMBLY

3-1. Loarding Panel 5
3-2. MD (BU-5BD20) Block 5

SECTION 4. TEST MODE

4-1. AF Mode 6
4-2. ADJ Mode 7
4-3. CLV-S Mode 7

SECTION 5. ELECTRICAL BLOCK CHECKING 8

SECTION 6. DIAGRAMS

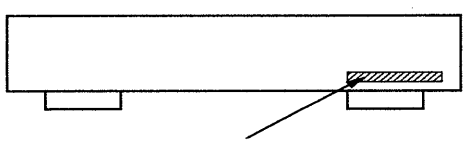
6-1. Circuit Boards Location 10
6-2. Printed Wiring Board — BD Section — 11
6-3. Schematic Diagram — BD Section — 13
6-4. Printed Wiring Board — Main Section — 15
6-5. Schematic Diagram — Main Section — 19
6-6. IC Block Diagrams — BD Section — 23
— Main Section — 24
6-7. IC Pin Functions
• IC101 Digital Signal Processor (CXD2545Q) 25
• IC801 CD Mech. Controller, FL Driver (CXP82316-063Q) 28

SECTION 7. EXPLODED VIEWS

7-1. Case and Back Panel Section 29
7-2. Front Panel Section 30
7-3. Mechanism Deck Section (CDM25C-5BD20) 31
7-4. Base Unit Section (BU-5BD20) 32

SECTION 8. ELECTRICAL PARTS LIST 33

MODEL IDENTIFICATION
— BACK PANEL —



US, Canadian model : 4-980-078-1□
AEP, UK model : 4-980-078-2□

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTE

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

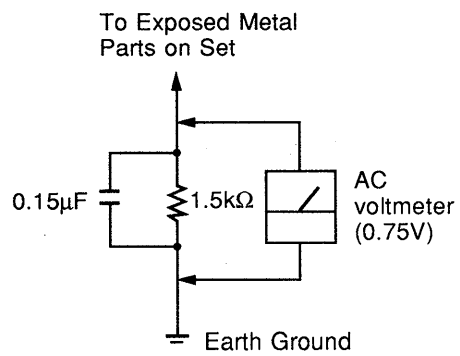


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is include in the repain parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens

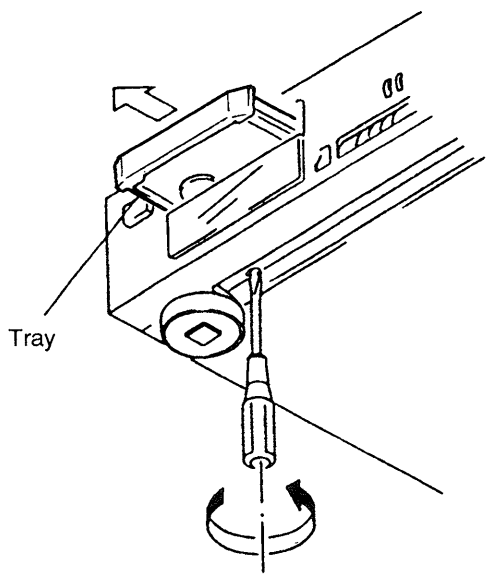
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output three times.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow.

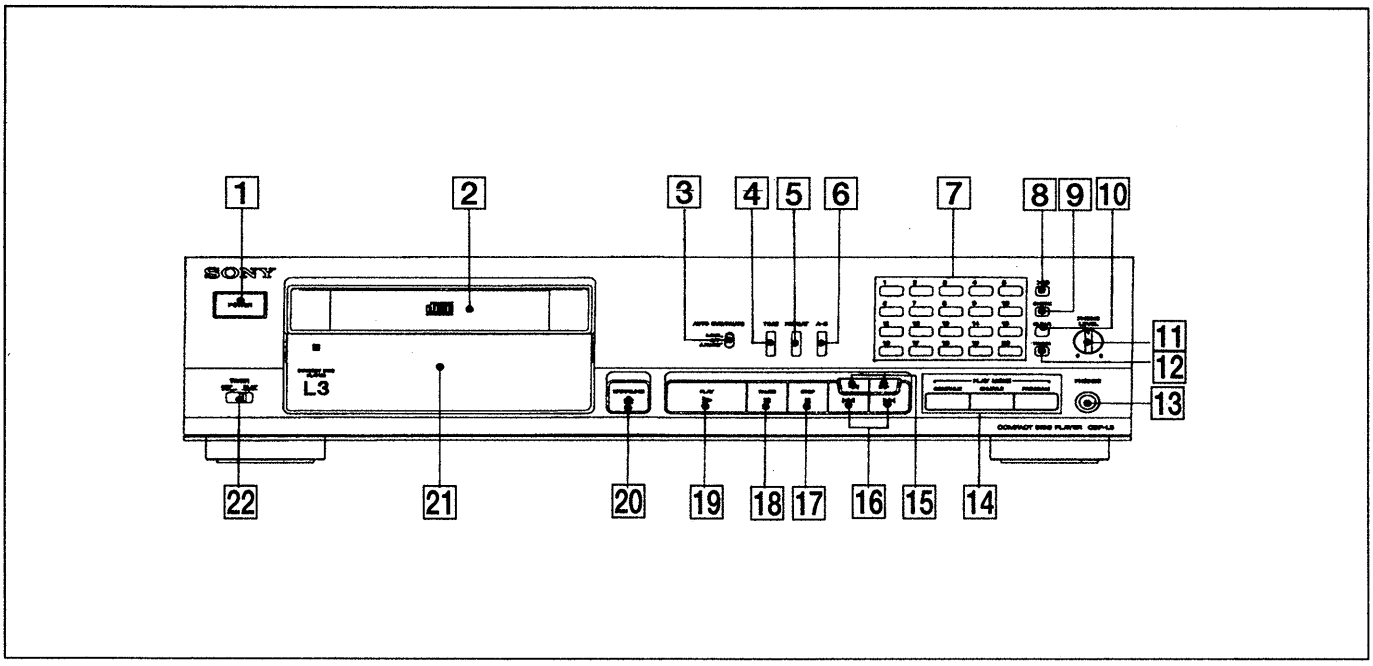
* To close the disc tray, turn the driver in the reverse direction.



SECTION 2
GENERAL

Identifying the Parts

Front Panel



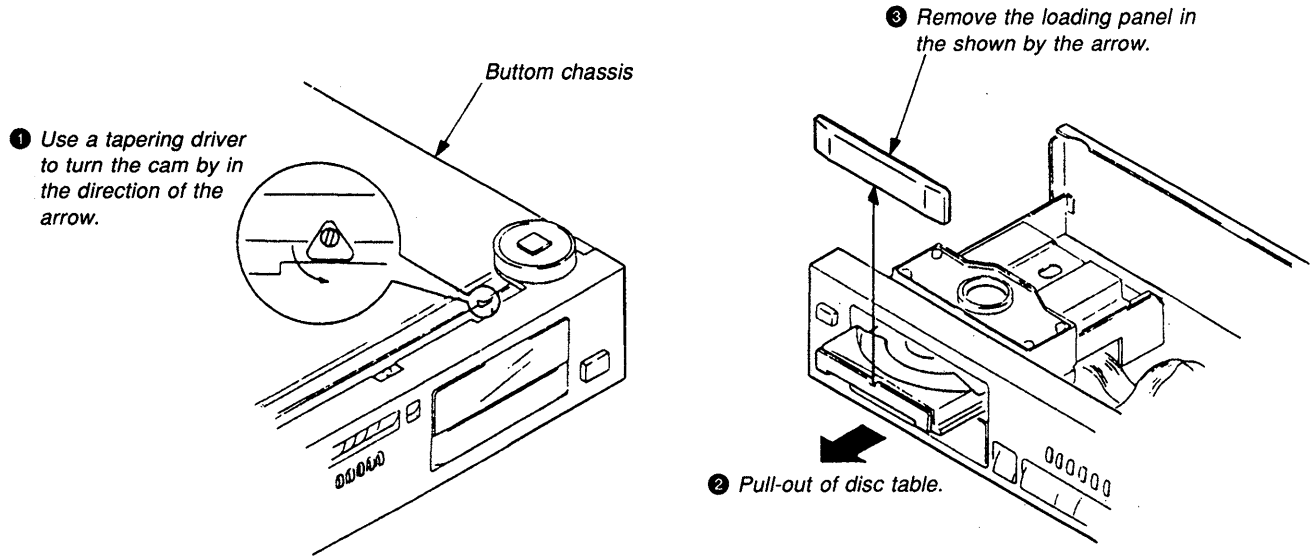
1 POWER switch
2 Disc tray
3 AUTO CUE/PAUSE switch
4 TIME button
5 REPERT button
6 A–B button
7 Numeric buttons
8 >20 (over 21) button
(>10 (over 10) button on the remote commander)
9 CHECK button
10 CLEAR button
11 PHONE LEVEL control
12 FADER button
13 PHONES jack
14 PLAY MODE buttons
CONTROL button
SHUFFLE button
PROGRAM button
15 ◀◀/▶▶ (manual search) buttons
16 I◀◀/▶▶I (AMS*) buttons
17 STOP ■ button
18 PAUSE ❚❚ button
19 PLAY ▶ button
20 OPEN/CLOSE ⏏ button
21 Display window
22 TIMER switch

* AMS is the abbreviation for Automatic Music Sensor.

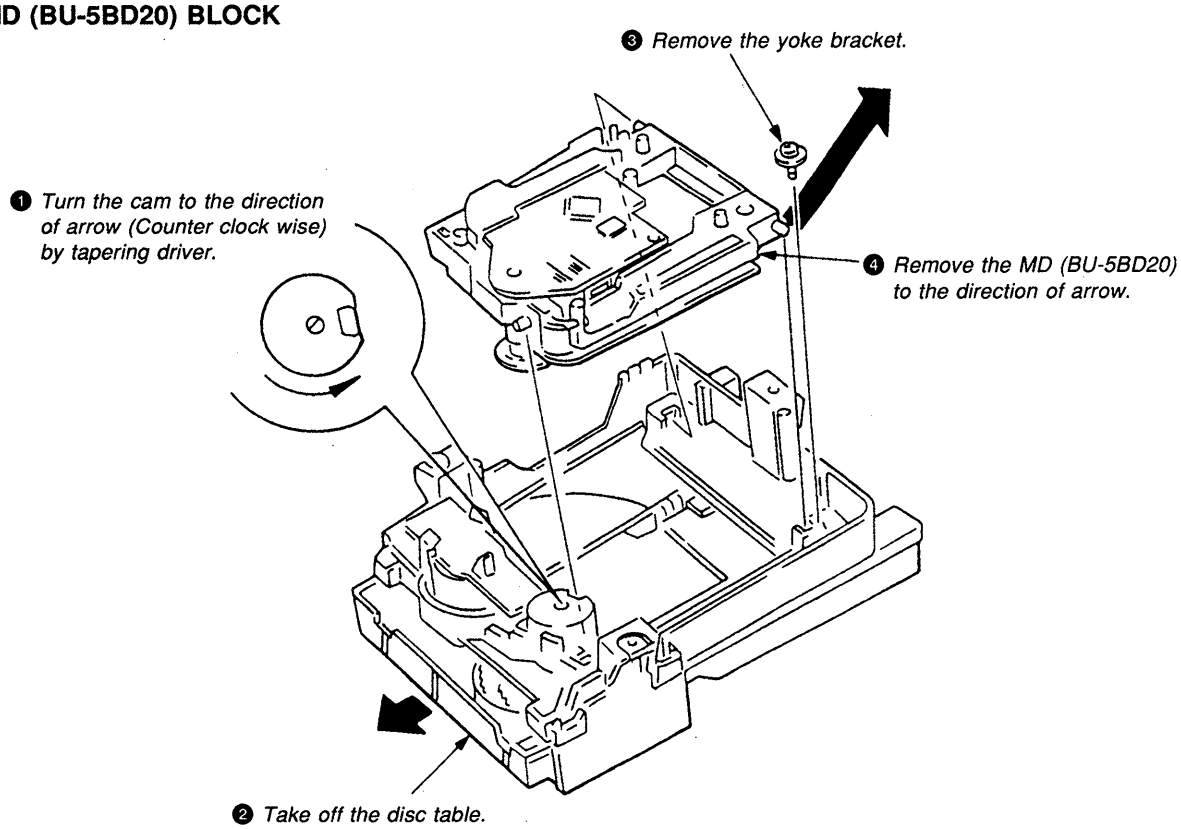
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

3-1. LOADING PANEL


❸ Remove the loading panel in the shown by the arrow.
Buttom chassis
❶ Use a tapering driver to turn the cam by in the direction of the arrow.
❷ Pull-out of disc table.

3-2. MD (BU-5BD20) BLOCK


❸ Remove the yoke bracket.
❶ Turn the cam to the direction of arrow (Counter clock wise) by tapering driver.
❹ Remove the MD (BU-5BD20) to the direction of arrow.
❷ Take off the disc table.

SECTION 4
TEST MODE

4-1. AF MODE

The following checks can be performed in the AF mode, which is set by connecting the TP2 (AFADJ) terminal to the GND and turning on the power.

• FL tube check

After all segments light up, when the ▶button is pressed, the following will be displayed. (Partial lighting 1)

(Partial lighting 1)

When the ■button is pressed, the following will be displayed. (Partial lighting 2)

	2		4	
6		8		10
	12		14	
16		18		20

(Partial lighting 2)

When the OPEN/CLOSE⏏button is pressed, all will light up again.

• Key check

All buttons have corresponding button numbers. When a button is pressed, the counter will count up and display the button's number. However, the counter will only count to "38". It will not count for buttons already pressed once, but will display the button's number.

Display of counting　　Display of button number

Button	Button No. Displayed	Button	Button No. Displayed
1	28	>20	03
2	31	CHECK	02
3	12	CLEAR	01
4	11	FADER	00
5	04	PAUSE❚❚	32
6	30	⏮	43
7	39	⏭	44
8	13	◀◀	46
9	10	▶▶	45
10	05	CONTUNUE	16
11	35	SHUFFLE	17
12	38	PROGRAM	18
13	14	TIME	26
14	09	REPEAT	25
15	06	A–B	24
16	36	PLAY▶	Partial lighting 1
17	37	STOP■	Partial lighting 2
18	15	OPEN/CLOSE⏏	All lit
19	08		
20	07		

• Remote commander check

When the ▶button of the remote commander is pressed, the "▶" lights up. All go off when the other buttons are pressed.

• Switch check

The following are displayed according to the position of the TIMER switch and AUTO CUE/PAUSE switch.

Switch	Switch Position	FL Tube Display
TIMER	OFF	No display
	PLAY	REPEAT
AUTO CUE/ PAUSE	OFF	No display
	A. PAUSE	MIN
	A. CUE	SEC

• Audio check

- Initial setting of digital filter and release of mute
- When the TP2 (AFADJ) terminal is set to HIGH (VDD), emphasis turns on. When set to LOW (GND), it turns off.

4-2. ADJ MODE

The following operations are performed in the ADJ mode, which is set by connecting the TP1 (ADJ) terminal to the GND and turning on the power.

- During playback, there is no problem even if the GFS is continuously LOW.
- High speed search is prohibited during access.
- During playback, the gain of focus servo and spindle servo does not decrease.
- Servo related manual operations and measurement can be performed.
  (For details of operations, refer to Table of Key Operations in ADJ Mode.)

4-3. CLV-S MODE

The spindle servo for playback sets into the CLV-S mode when the TP2 (AFADJ) terminal is connected to GND after turning on the power.

TABLE OF BUTTON OPERATIONS IN ADJ MODE

The jitter value display mode can be set after the all-music remaining number mode using the TIME button.

The functions of the number buttons are shown in the following table.

FUNCTIONS OF NUMBER BUTTONS

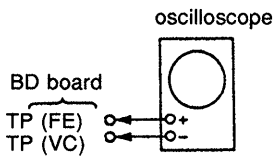
Button	Function
1	Focus bias 8-step up
2	Middle of focus bias up/down turning point
3	Tracking servo, sled servo off
4	Auto gain initialization
5	Focus servo off
6	Focus bias 8-step down
7	Immediate readjustment of focus bias
8	Tracking servo, sled servo on
9	
10	Auto focus bias start point
11	S-letter mode (S-letter curve can be seen when FE is measured)
12	Simple eccentricity measurement
13	Auto focus bias upper side turning point display
14	Auto focus bias lower side turning point display
15	Auto focus bias center display
16	Auto focus bias optimum focus bias display
17	Auto focus bias minimum jitter value display
18	TE, traverse average display
19	VC, FE, RF average display
20	Focus, tracking, sled auto gain display

SECTION 5
ELECTRICAL BLOCK CHECKING

Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens using an applicator with neutral detergent when the signal level is low than specified value with the following checks.

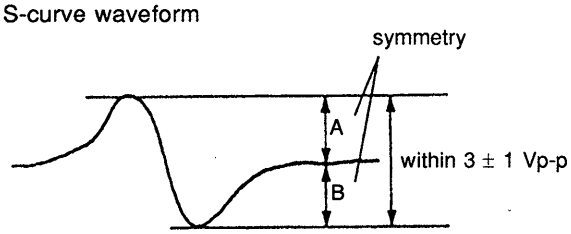
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (EE) on BD board.
2. Connect the test point TP1 (ADJ) to the ground with a lead wire on main board.
3. Turn the Power switch on to set the ADJ mode.
4. Load the disc (YEDS-18)
5. The S curve can be measured by pressing the number button "11".
6. Check if the oscilloscope wavefome (S-curve) is symmetrical between A and B. And confiem peak to peak level within 3±1 Vp-p.

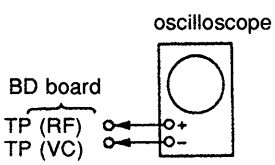
S-curve waveform



7. Disconnect the lead wire of TP (ADJ) connected in step 2

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



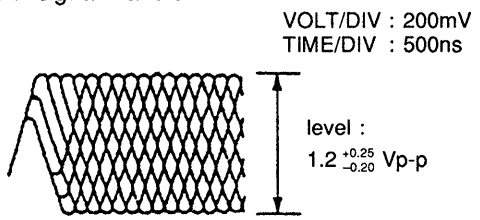
Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check if RF signal level is correct or not.

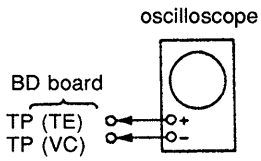
Note :

A clear RF signal waveform means that the shape " ◊ " can be clearly distinguished at the center of the waveform.

RF signal waveform

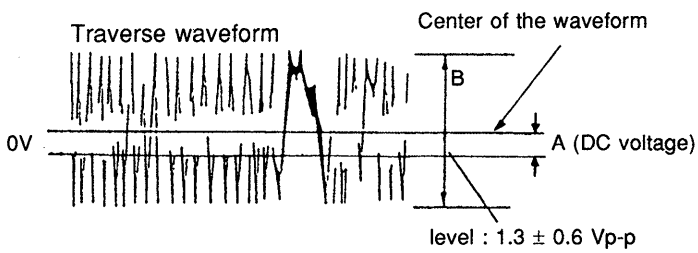


E-F Balance Check



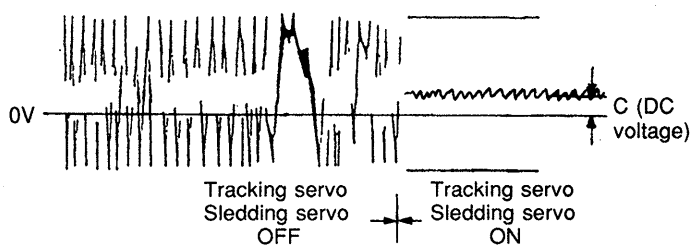
Procedure :

1. Connect the test point TP1 (ADJ) to the ground with a lead wire on main board.
2. Connect oscilloscpe to test point TP (TE) on BD board.
3. Turn the Power switch on to set the ADJ mode.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the "3" button. (The tracking servo and the sledding servo are turned OFF.)
6. Check the level B of the oscilliscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following :
   A/B × 100 = less than ± 22%



7. Press the "8" button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 6.

Traverse waveform

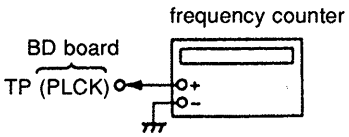


8. Disconnect the lead wire of TP (ADJ) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

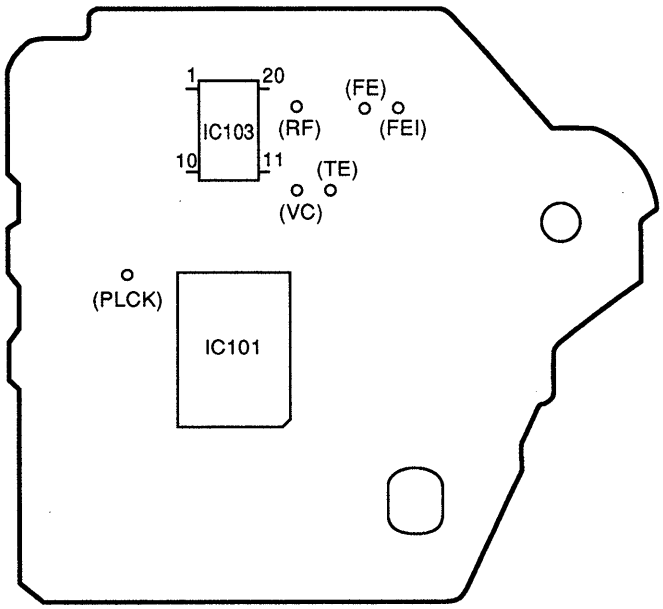
1. Connect frequency counter to test point (PLCK) with lead wire.



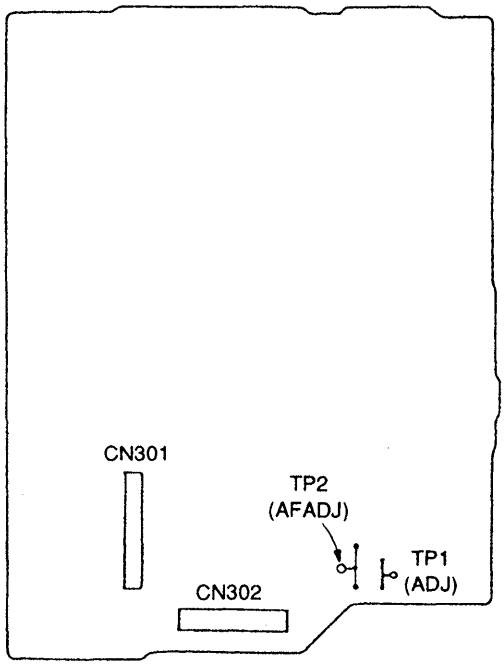
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[BD BOARD] — Conductor Side —

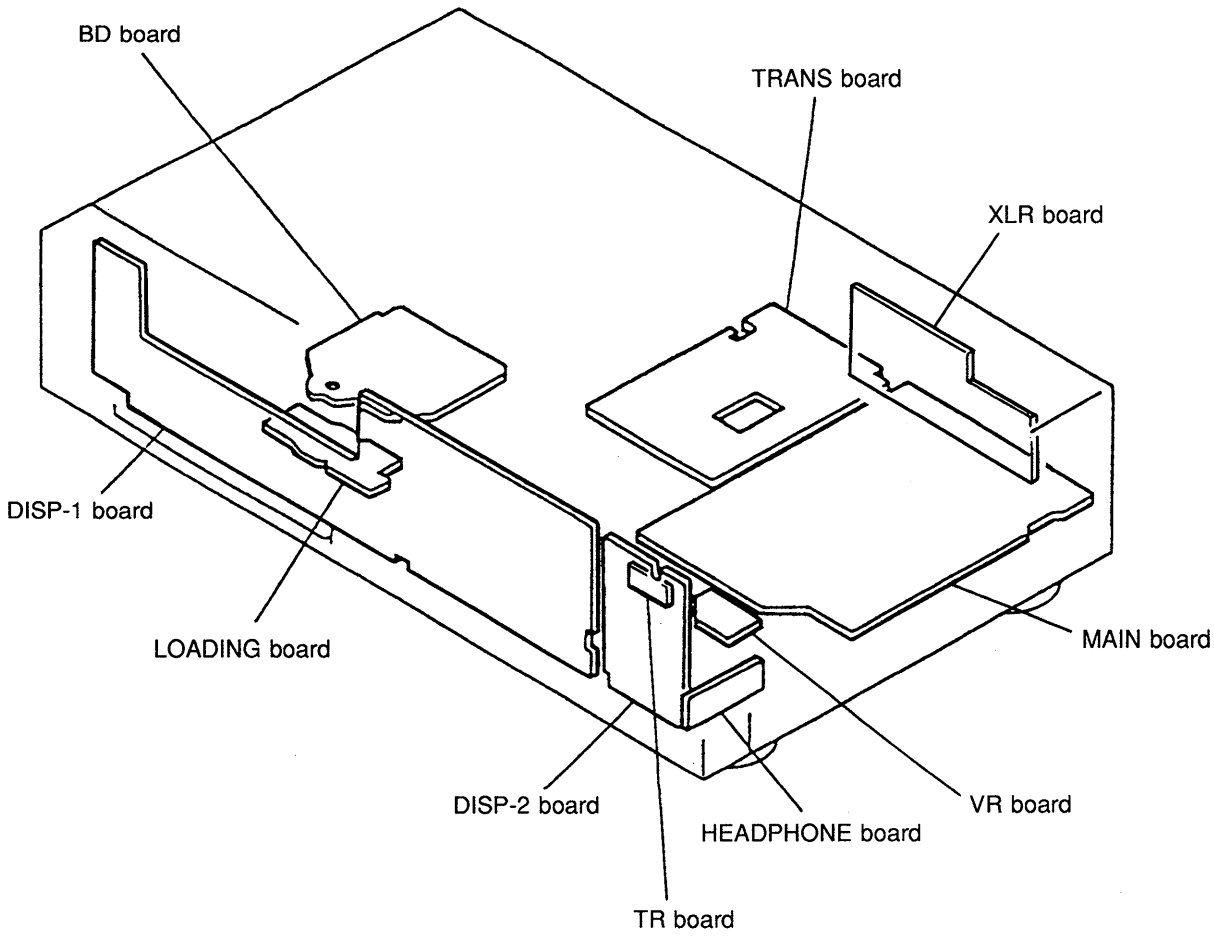


[MAIN BOARD] — Conductor Side —



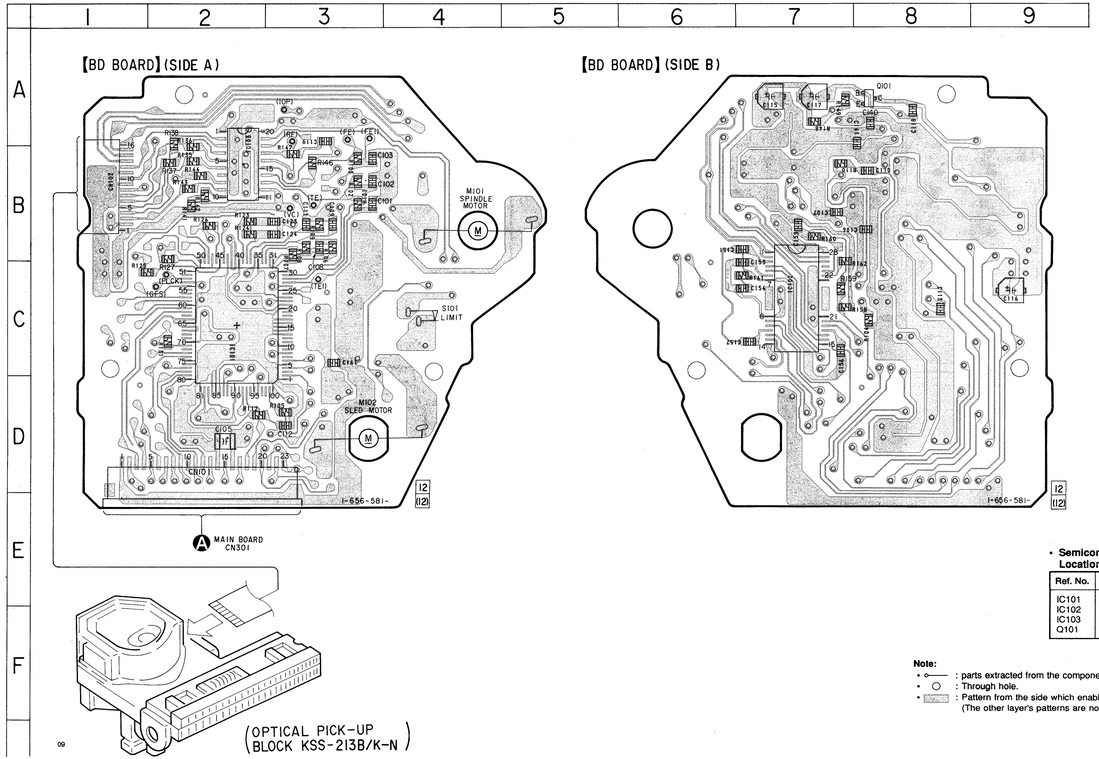
SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION



6-2. PRINTED WIRING BOARD — BD SECTION —

• See page 10 for Circuit Boards Location



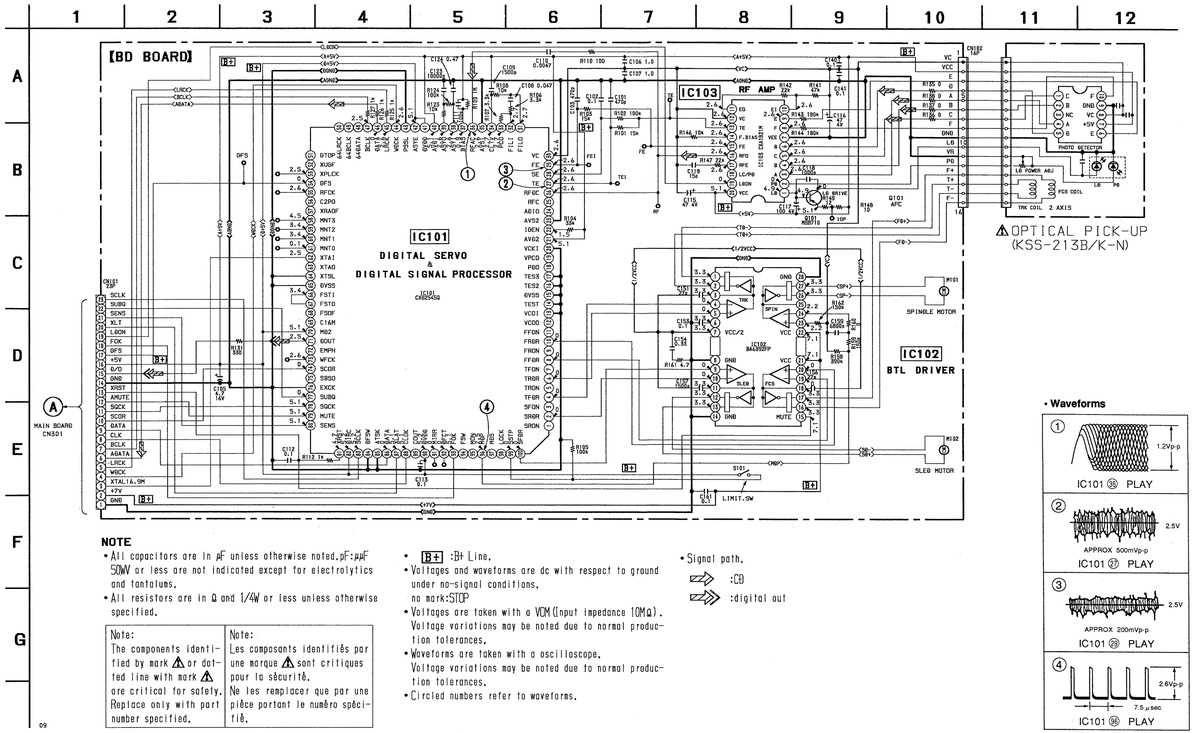
• **Semiconductor Location**

Ref. No.	Location
IC101	C-2
IC102	C-7
IC103	B-2
Q101	A-8

Note:
- ——: parts extracted from the component side.
- ○: Through hole.
- : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

6-3. SCHEMATIC DIAGRAM —BD SECTION —

• See page 23 for IC Block Diagrams
• See page 25 for IC Pin Functions. (IC101)



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ :B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark:STOP
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. :CD :digital out

• **Waveforms**

6-4. PRINTED WIRING BOARD — MAIN SECTION —

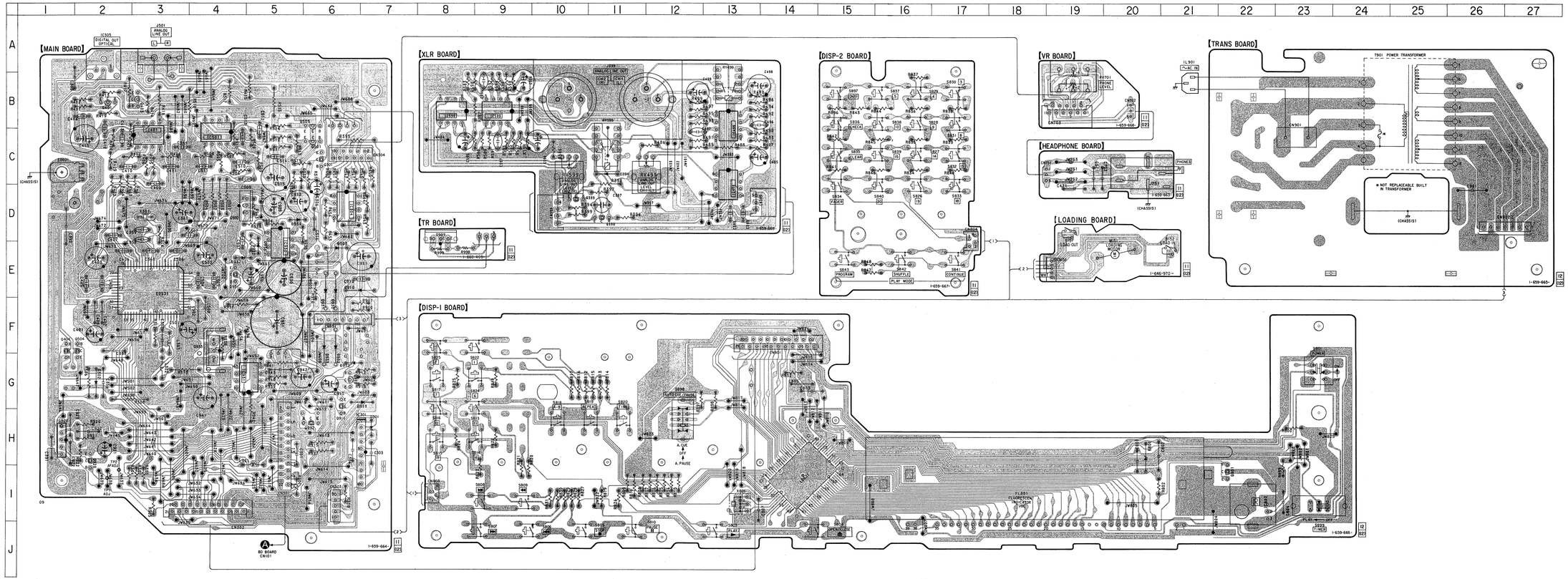
• See page 10 for Circuit Boards Location

• **Semiconductor Location**

Ref. No.	Location
D301	H-7
D302	G-2
D303	E-6
D394	C-11
D801	H-20
D910	E-6
D911	G-7
D912	G-6
D930	F-6
D931	F-6
D932	G-6
D933	G-6
D934	D-5
D935	C-6
D936	E-5
D937	E-4
IC301	H-7
IC303	E-3
IC304	D-6
IC305	A-2
IC401	C-3
IC498	D-13
IC499	C-13
IC501	C-4
IC598	B-8
IC599	B-9
IC801	I-14
IC802	I-22
IC920	H-1
IC930	E-5
IC931	G-4
Q301	C-6
Q398	D-11
Q399	D-10
Q401	B-2
Q403	B-3
Q404	F-1
Q501	C-6
Q503	C-6
Q504	F-2
Q801	I-22
Q910	G-6
Q911	H-6
Q920	H-2
Q930	D-4
Q931	E-4
Q932	H-6
Q933	F-4
Q999	E-9

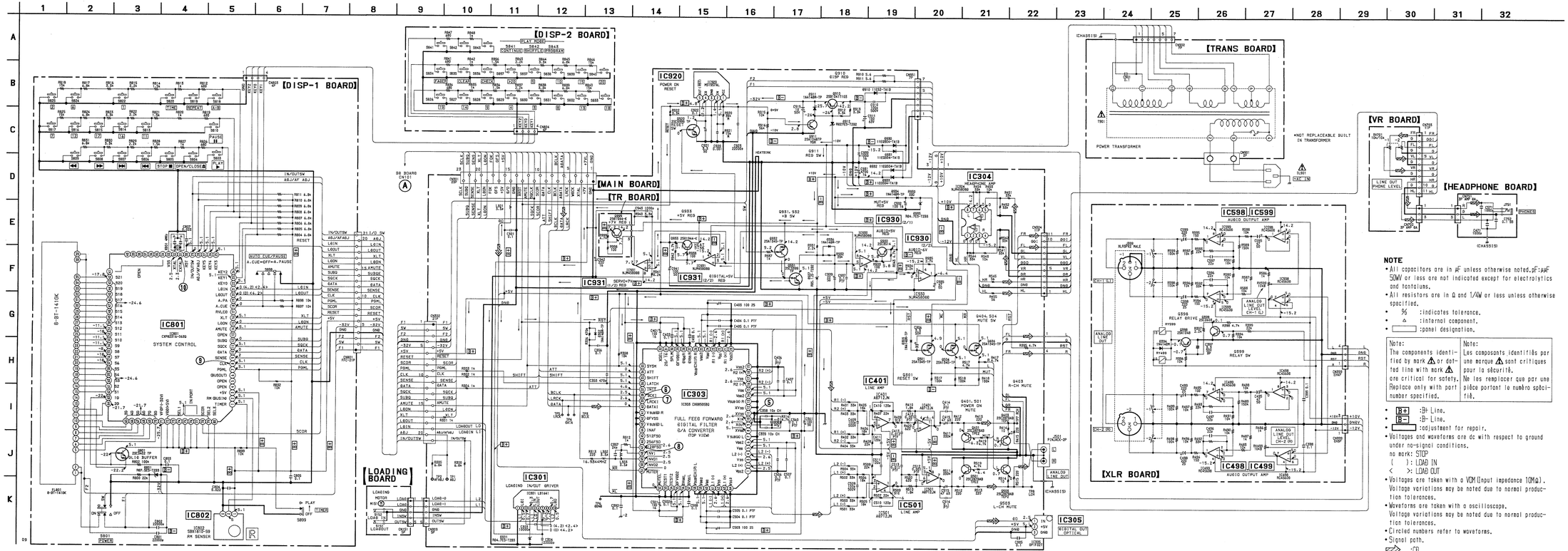
Note:

- ◇—— : parts extracted from the component side.
- ▨▨▨ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

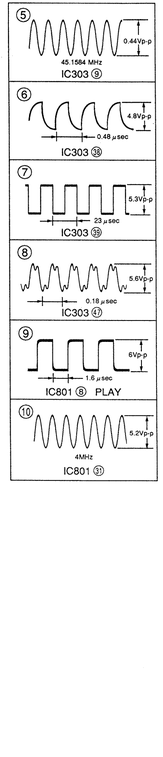


6-5. SCHEMATIC DIAGRAM — MAIN SECTION —

- See page 24 for IC Block Diagrams
- See page 28 for IC Pin Functions (IC801)



• Waveforms



NOTE

- All capacitors are in µF unless otherwise noted. pF: µµF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- △ :internal component.
- ▭ :panel designation.

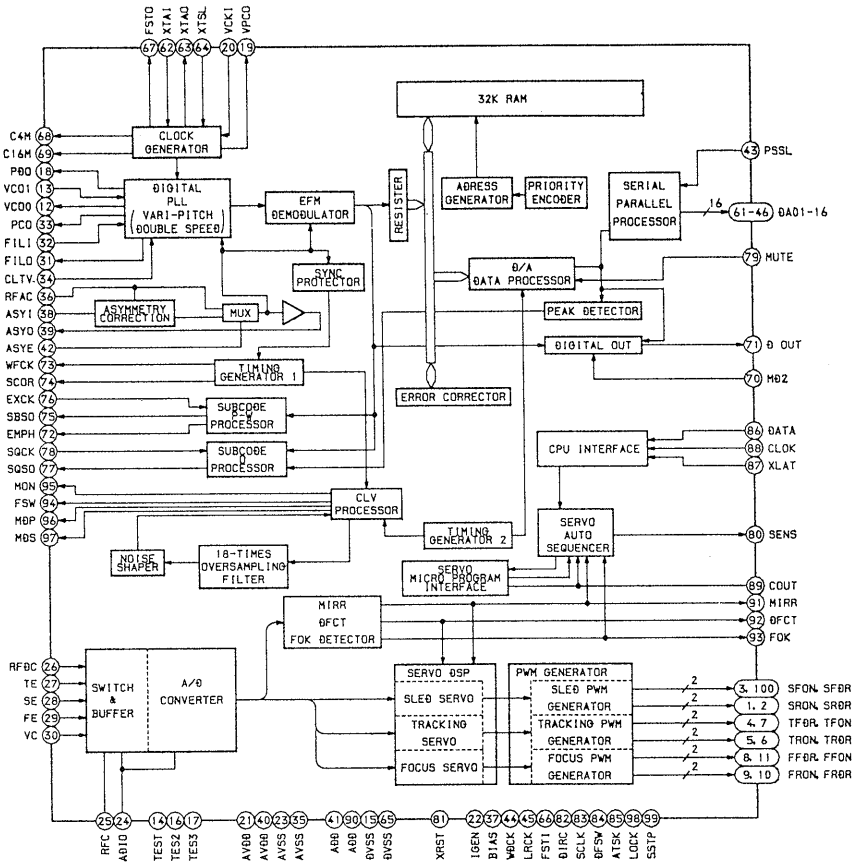
Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ :B+ Line.
- B− :B− Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ): LOAD IN
  < >: LOAD OUT
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ :CD
  ⇛ :digital out

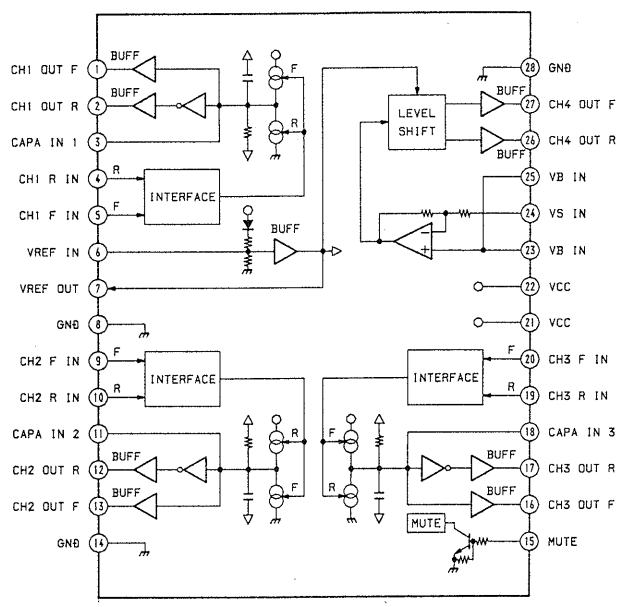
6-6. IC BLOCK DIAGRAMS

— BD SECTION —

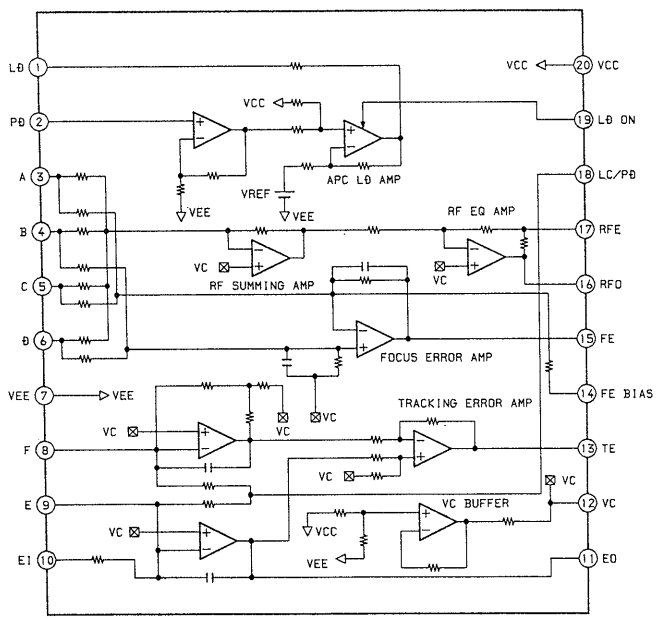
IC101 CXD2545Q



IC102 BA6392FP

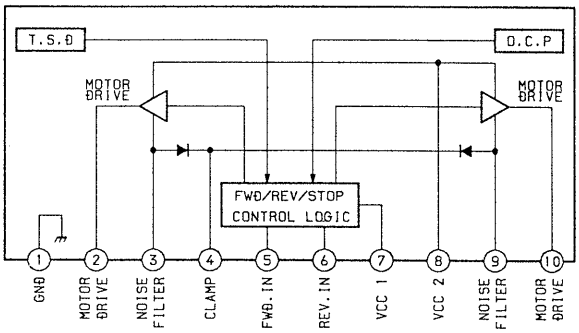


IC103 CXA1821M

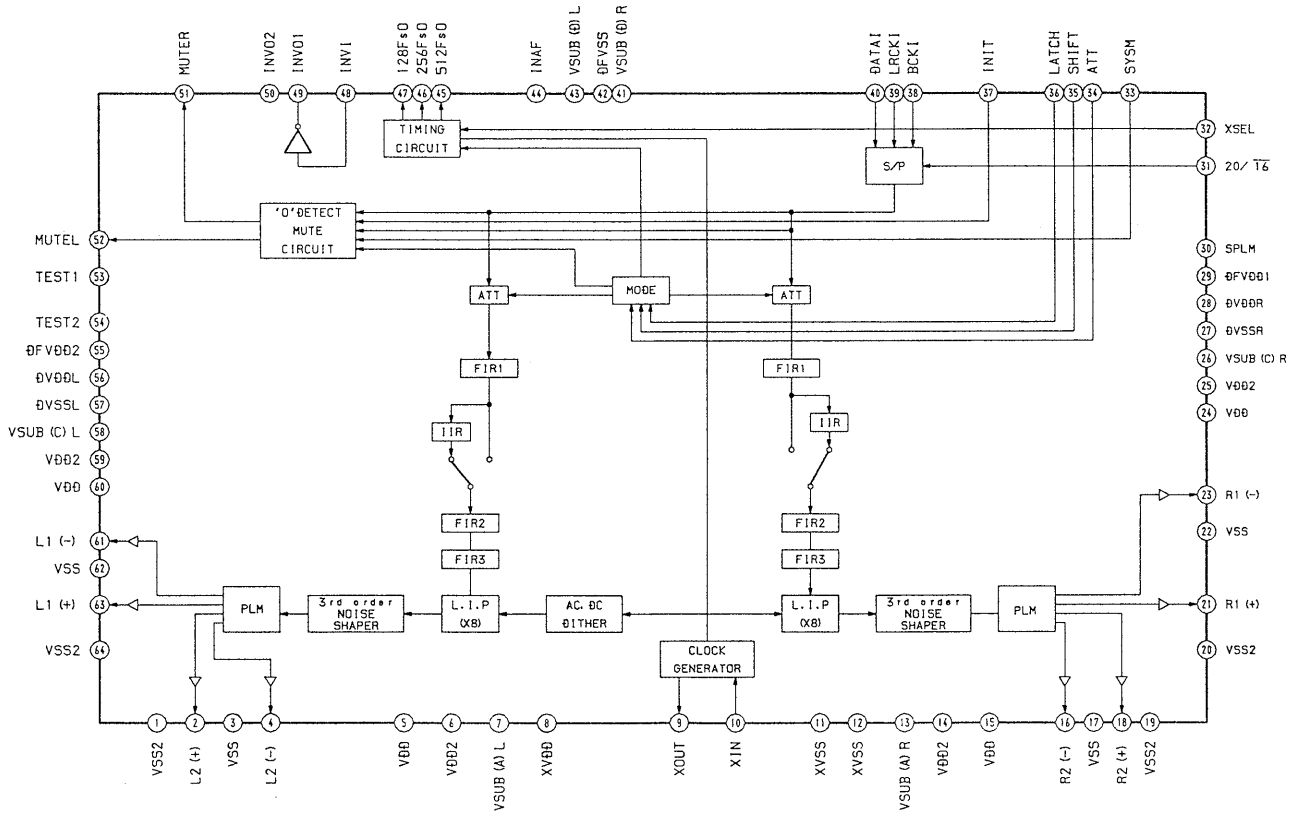


— MAIN SECTION —

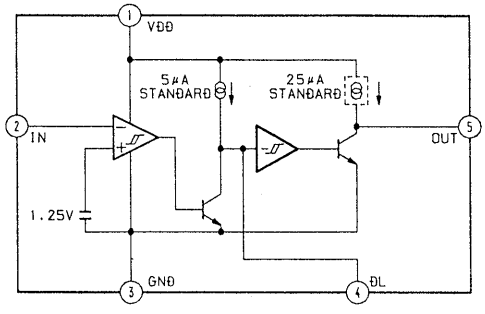
IC301 LB1641



IC303 CXD8505BQ



IC920 M51957AL



6-7. IC PIN FUNCTIONS

• IC101 Digital Signal Processor (CXD2545Q)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used)
12	VCOO	O	VCO output for analog EFM PLL (Not used)
13	VCOI	I	VCO output for analog EFM PLL (GND)
14	TEST	I	TEST pin connected normally to GND
15	DVss	–	Digital GND
16	TEST 2	I	TEST pin connected normally to GND
17	TEST 3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL (Not used)
19	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
20	VCKI	I	Clock input from variable pitch external VCO (GND)
21	AVD2	–	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	–	Analog GND
24	ADIO	O	Input from A/D converter (Not used)
25	RFC	I	L.P.F capacitor connect pin for RFDC input (Not used)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	–	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry comparate voltage input
39	ASYO	O	EFM full swing output
40	AVD1	–	Analog power supply

Pin No.	Pin Name	I/O	Function
41	DV_{DD}	–	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock.
45	LRCK	O	48-bit slot D/A interface. LR clock.
46	DATA	O	DA 16 output when PSSL=1.48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1.48-bit slot bit clock when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1.64-bit slot serial data when PSSL=0 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1.64-bit slot bit clock when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1.64-bit slot LR clock when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1.GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1.XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA 09 output when PSSL=1.XPLCK output when PSSL=0
54	GFS	O	DA 08 output when PSSL=1.GFS output when PSSL=0
55	RFCK	O	DA 07 output when PSSL=1.RFCK output when PSSL=0
56	C2PO	O	DA 06 output when PSSL=1.C2PO output when PSSL=0 (Not used)
57	XRAOF	O	DA 05 output when PSSL=1.XRAOF output when PSSL=0
58	MNT3	O	DA 04 output when PSSL=1.MNT3 output when PSSL=0
59	MNT2	O	DA 03 output when PSSL=1.MNT2 output when PSSL=0
60	MNT1	O	DA 02 output when PSSL=1.MNT1 output when PSSL=0
61	MNT0	O	DA 01 output when PSSL=1.MNT0 output when PSSL=0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Not used)
64	XTSL	I	X'tal selection input pin
65	DVss	–	Digital GND
66	FSTI	I	Reference clock input for Digital servo block
67	FSTO	O	2/3 divider output of pins 62, 63
68	FSOF	O	1/4 divider output of pins 62, 63
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output
76	EXCK	I	Clock input for SBSO read-out
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQSO read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output

Pin No.	Pin Name	I/O	Function
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin
85	ATSK	I	Input pin for anti-shock
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU
89	COUT	O	Numbers of track counted signal output (Not used)
90	DV_{DD}	–	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter (Not used)
95	MON	O	Output to control ON/OFF of spindle motor (Not used)
96	NDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Not used)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

• **IC801 CD Mech. Controller, FL Driver (CXP82316-063Q)**

Pin No.	Pin Name	I/O	Function
1	TIMER	I	Timer switch input
2	RM (BUSIN)	I	Audio bus (Remote controller) input
3	+5V	–	Connected to +5V
4	OPEN	–	} (Remote contoller)
5	OPEN	–	
6	(BUS-OUT)	O	Audio bus output (Not used)
7	PGML	O	Latch signal output pin to digital filter (IC303).
8	CLK	O	Serial clock output
9	SENSE	I	SENSE signal input
10	DATA	O	Serial data output
11	SQCK	O	Read out clock output for subcodeQ data
12	SUBQ	I	Subcode Q data input
13	OPEN	–	Not used (open)
14	AMUTE	O	Analog muting control signal output "H":ON
15	LDON	O	Optical pickup laser diode control output "H":ON
16	XLT	O	Serial data latch signal output
17	RVLED	O	VOLUME LED drive output (Noat used)
18	A. CUE	I	AUTO CUE switch input "L":ON
19	A. PA	I	AUTO PAUSE switch input "L":ON
20	LDOUT	O	} Loading motor control signal output.
21	LDIN	O	
22 to 27	KEY0 to KEY5	I	Key input (S803 to S843)
28	ADJ/AFADJ	–	ADJ, AFADJ test pin
29	IN/OUTSW	I	Loading IN/OUT switch input
30	RST	I	Reset signal input "L":Reset
31	EXTAL	I	Clock input (4 MHz)
32	XTAL	O	Clock output (4MHz)
33	Vss	–	GND
34 to 41	OPEN	–	Not used (open)
42 to 62	S21 to S1	O	FL segment output
63 to 70	1G to 8G	O	FL grid output
71	VFDP (-30V)	–	–30V pin for FL display tube
72	VDD (+5V)	–	} +5V pin
73	–	I	
74	SEL1	I	} Connected to +5V
75	IN PORT	I	
76	IN PORT	–	
77	IN PORT	–	
78	SCOR	I	Read out timing signal input for subcode Q data
79	SEL2	–	Connected to +5V
80	SEL3	–	Connected to GND

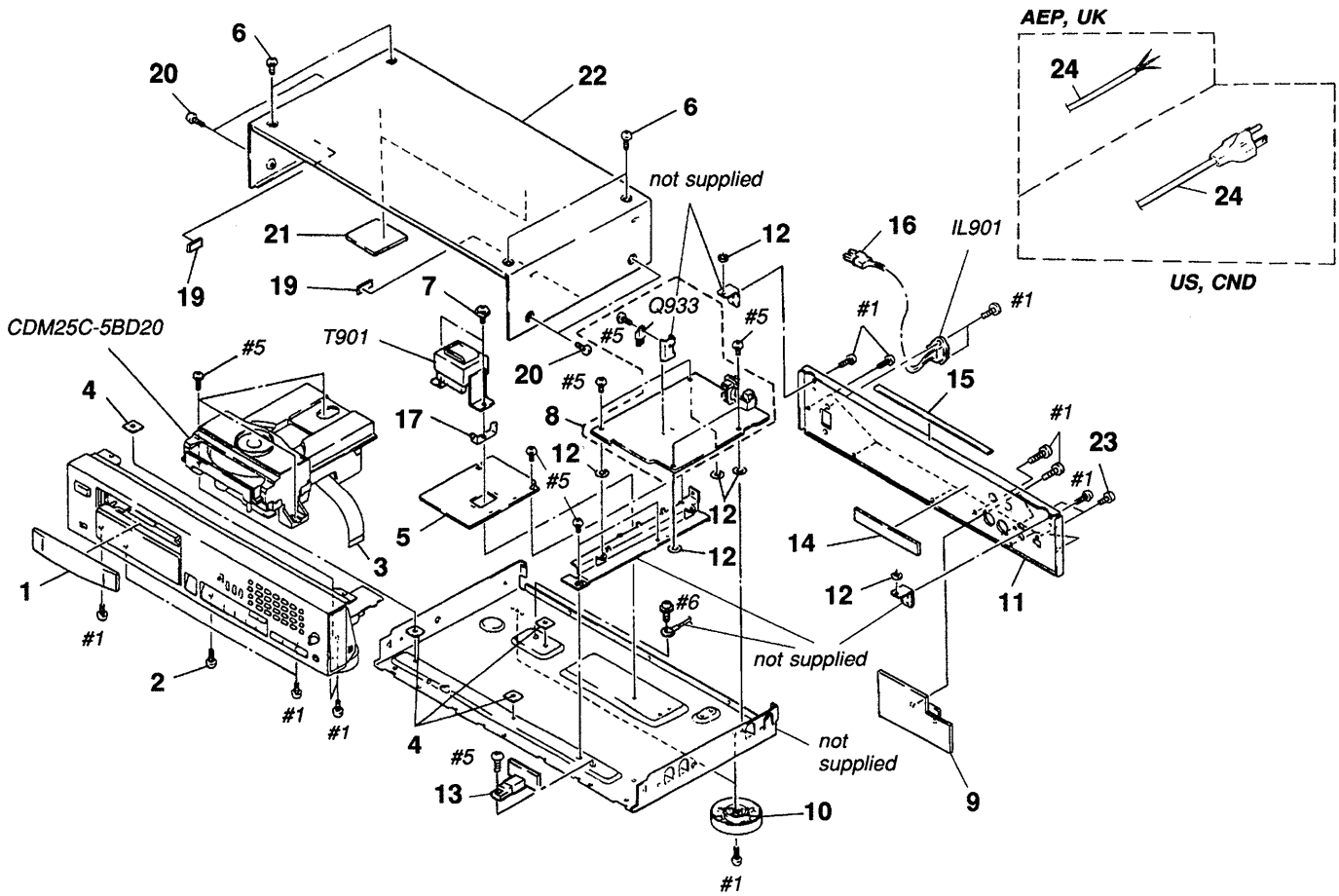
SECTION 7
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND :Canadian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

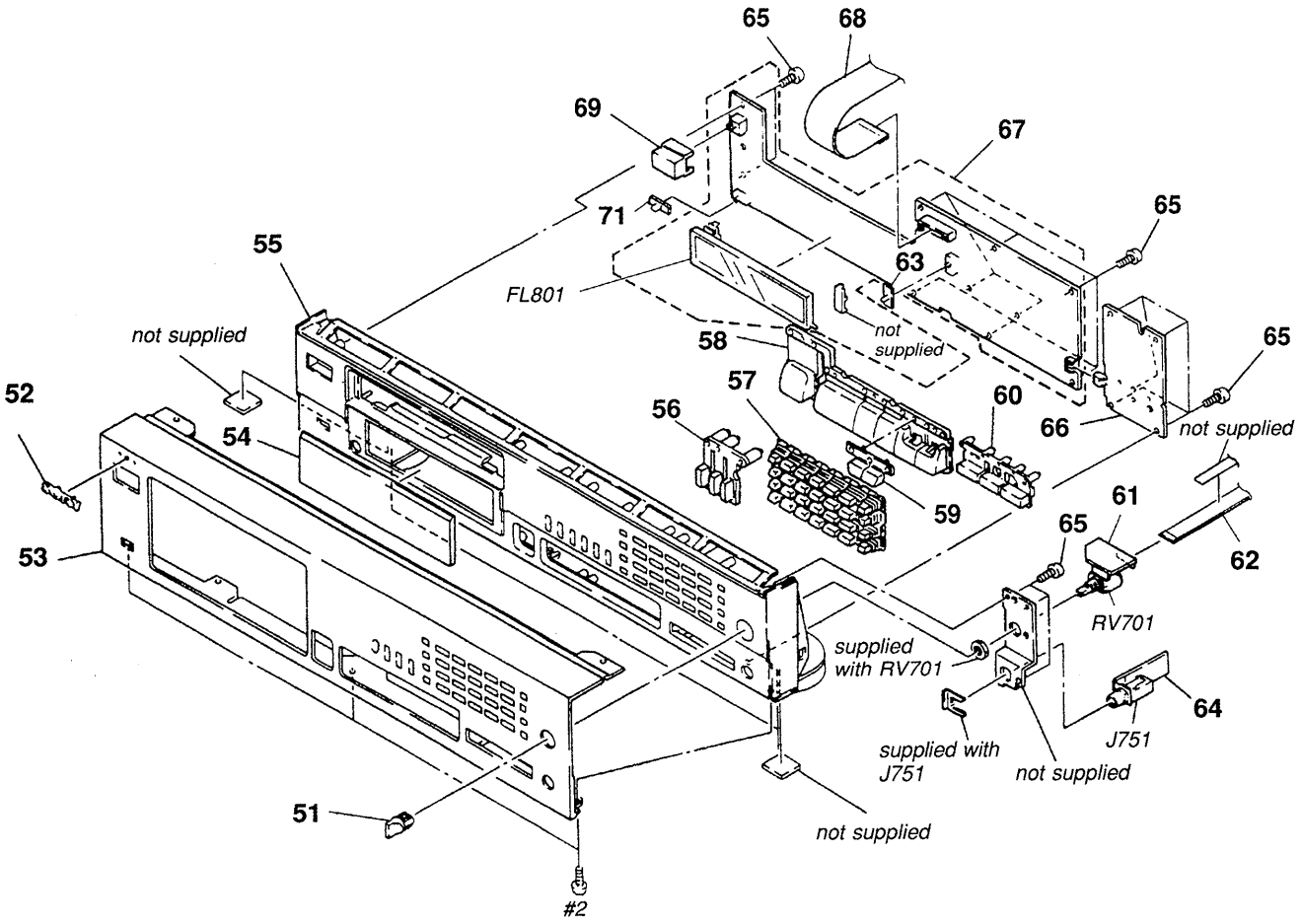
7-1. CASE AND BACK PANEL SECTION



REF.No.	Part No.	Description	Remark
1	4-980-211-01	PANEL, LOADING	
2	3-703-685-21	SCREW (+BV 3X8)	
3	1-696-760-11	WIRE (FLAT TYPE)(23 CORE)	
4	4-959-062-01	SHEET (CDM)	
* 5	1-659-665-11	TRANS BOARD	
6	3-363-099-01	SCREW (CASE 3 TP2)	
7	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
* 8	A-4673-878-A	MAIN BOARD, COMPLETE	
* 9	A-4673-883-A	XLR BOARD, COMPLETE	
10	4-956-885-01	FOOT (F58175S2W)	
* 11	4-980-078-11	PANEL, BACK (US,CND)	
* 11	4-980-078-21	PANEL, BACK (AEP,UK)	
12	4-955-939-01	WASHER (CASE)	
* 13	1-660-405-11	TR BOARD	
14	4-959-077-01	DAMPER	

REF.No.	Part No.	Description	Remark
15	4-927-653-01	SHEET (F/P)	
16	1-776-999-11	CORD (WITH CONNECTOR)	
17	4-952-197-01	PLATE (TR), GROUND	
19	3-902-282-01	CUSHION (A)	
20	3-704-366-21	SCREW (CASE)(M3X10)	
* 21	4-962-329-01	DAMPER	
22	4-929-529-01	CASE	
23	4-909-982-11	SCREW, TAPPING	
⚠24	1-551-812-11	CORD POWER (US, CND)	
⚠24	1-590-910-11	CORD SET, POWER (AEP, UK)	
⚠*IL901	1-580-375-21	INLET 3P (~ AC IN)	
Q933	8-729-021-82	TRANSISTOR 2SD2396K	
⚠T901	1-429-487-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-429-488-11	TRANSFORMER, POWER (AEP,UK)	

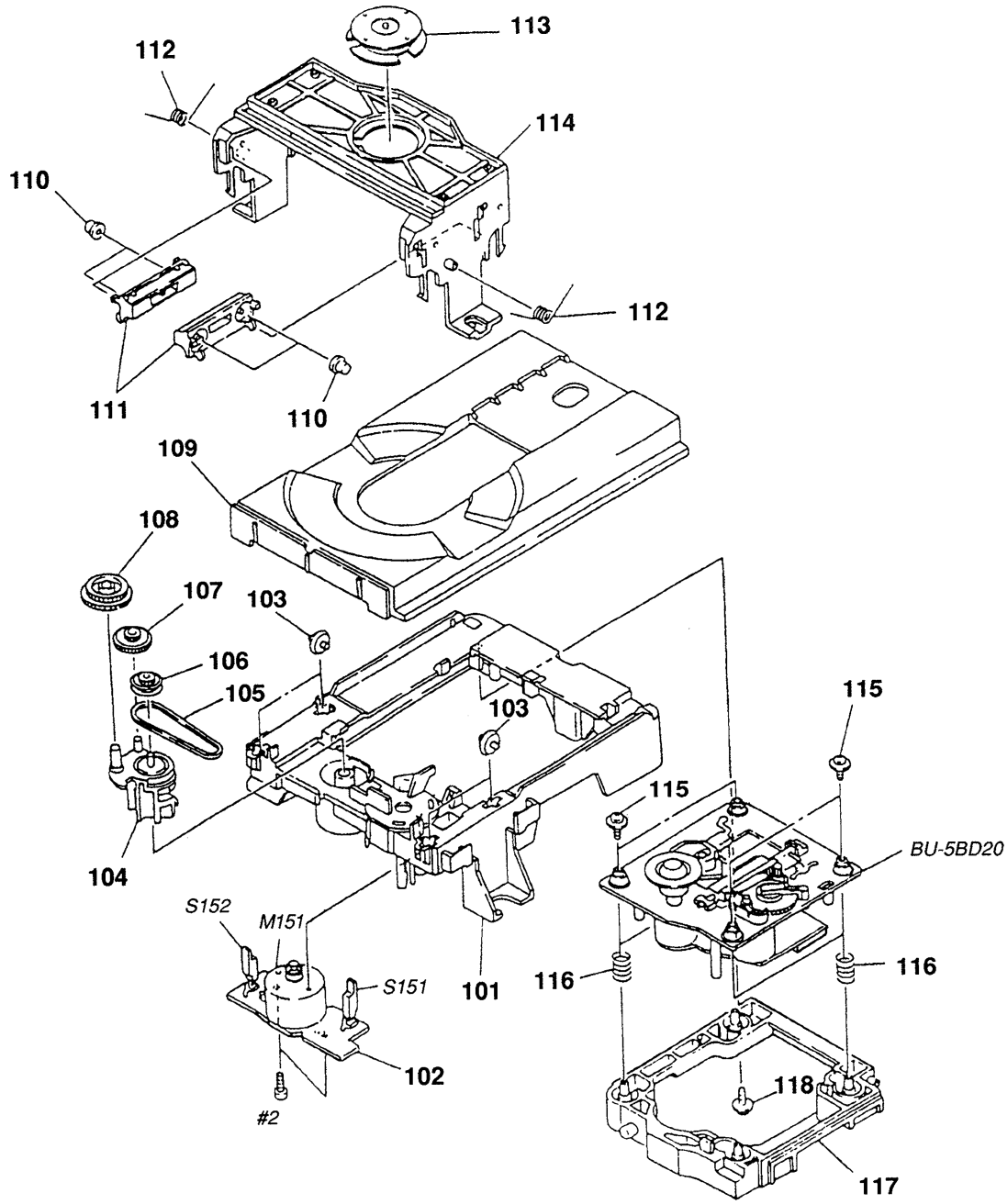
7-2. FRONT PANEL SECTION



REF.No.	Part No.	Description	Remark
51	4-950-189-01	KNOB (A)(VOL)	
52	4-942-568-01	EMBLEM (NO.5), SONY	
53	4-980-077-01	PANEL, FRONT	
54	4-980-080-01	PLATE, INDICATION	
55	X-4943-372-1	BASE, PANEL	
56	4-955-934-11	BUTTON (FILE)	
57	4-955-935-11	BUTTON (20 KEY)	
58	4-980-079-01	BUTTON (PLAY)	
59	4-955-932-31	BUTTON (MMS)	
60	4-955-933-11	BUTTON (MODE 3)	
* 61	1-659-668-11	VR BOARD	
62	1-751-712-11	WIRE (FLAT TYPE)(11 CORE)	

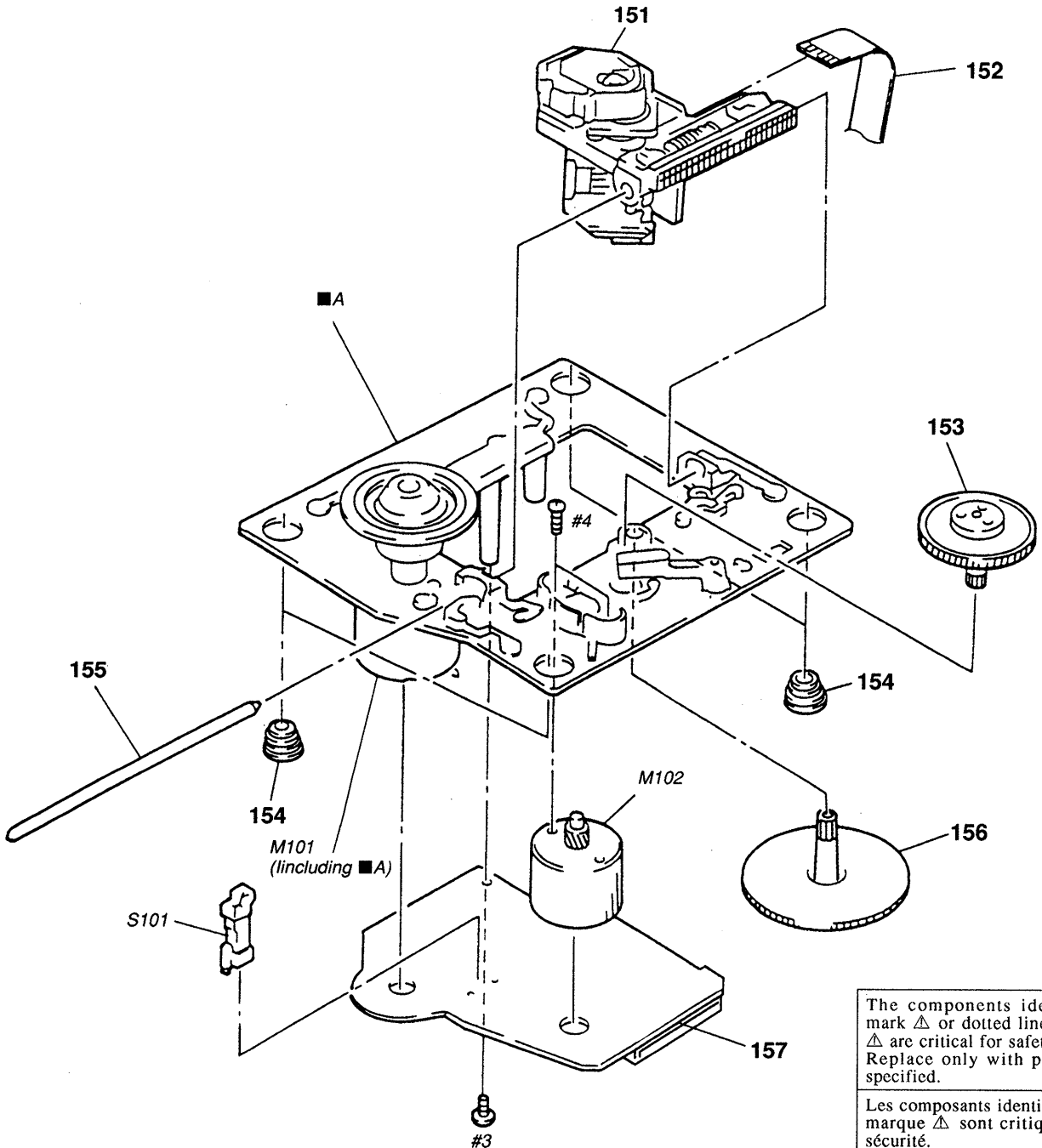
REF.No.	Part No.	Description	Remark
63	3-917-216-02	KNOB (TIMER)(AUTO CUE/PAUSE)	
* 64	1-659-663-11	HEADPHONE BOARD	
65	4-951-620-01	SCREW (2.6X8), +BVTP	
* 66	A-4673-881-A	DISP-2 BOARD, COMPLETE	
* 67	A-4673-880-A	DISP-1 BOARD, COMPLETE	
68	1-751-713-11	WIRE (FLAT TYPE)(21 CORE)	
69	4-947-034-31	BUTTON (POWER)	
71	4-922-518-11	KNOB (TIMER)(TIMER PLAY)	
FL801	1-519-757-11	INDICATOR TUBE, FLUORESCENT	
J751	1-770-307-11	JACK (LARGE TYPE)(PHONES)	
RV701	1-225-217-11	RES, VAR, CARBON 10K/10K (PHONES LEVEL)	

7-3. MECHANISM DECK SECTION (CDM25C-5BD20)



REF.No.	Part No.	Description	Remark
* 101	4-954-190-01	BASE (MD)	
* 102	1-646-970-11	LOADING BOARD	
103	4-954-193-01	ROLLER (A)	
104	4-933-109-01	CAM	
105	4-927-649-01	BELT	
106	4-927-651-01	PULLEY (S)	
107	4-967-268-01	GEAR (C)	
108	4-933-107-01	GEAR (PL)	
109	4-961-794-01	TABLE, DISK	
110	4-954-194-01	ROLLER (B)	
111	4-954-199-01	PLATE, SLIDE	
112	4-954-195-01	SPRING, TORSION	
113	1-452-824-11	MAGNET	
* 114	4-954-192-01	HOLDER (M)	
115	4-933-134-01	SCREW (+PTPWH M2.6X6)	
116	4-959-996-01	SPRING (932), COMPRESSION	
117	4-933-129-01	HOLDER (BU)	
* 118	4-917-583-21	BRACKET, YOKE	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	

7-4. BASE UNIT SECTION (BU-5BD20)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

REF.No.	Part No.	Description	Remark
⚠151	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N	
152	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
153	4-917-567-01	GEAR (M)	
154	4-951-940-01	INSULATOR (BU)	
155	4-917-565-01	SHAFT, SLED	
156	4-917-564-01	GEAR (P), FLATNESS	
* 157	A-4673-509-A	BD BOARD, COMPLETE	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

SECTION 8
ELECTRICAL PARTS LIST

BD

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB.... μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

REF.No.	Part No.	Description			Remark
*	A-4673-509-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C140	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C157	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR, FFC 23P			
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-369-78	IC CXD2545Q			
IC102	8-759-176-09	IC BA6392FP			
IC103	8-752-072-45	IC CXA1821M-T6			

REF.No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R110	1-216-025-91	METAL GLAZE	100	5%	1/10W
R112	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R125	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R136	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R137	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R138	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R141	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R142	1-216-081-00	METAL CHIP	22K	5%	1/10W
R143	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R144	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	METAL GLAZE	12	5%	1/10W
R158	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R160	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			

BD **DISP-1** **DISP-2**

REF.No.	Part No.	Description			Remark
**********					
*	A-4673-880-A	DISP-1 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C801	1-161-494-00	CERAMIC	0.022uF	25V	
C802	1-161-494-00	CERAMIC	0.022uF	25V	
C803	1-164-159-11	CERAMIC	0.1uF	50V	
C804	1-161-494-00	CERAMIC	0.022uF	25V	
C805	1-164-159-11	CERAMIC	0.1uF	50V	
C807	1-161-494-00	CERAMIC	0.022uF	25V	
		< CONNECTOR >			
CN801	1-750-999-11	CONNECTOR, FFC/FPC 21P			
CN803	1-750-194-11	CONNECTOR, BOARD TO BOARD 4P			
		< DIODE >			
D801	8-719-110-04	DIODE RD7.5ES-B3			
		< FLUORESCENT INDICATOR >			
FL801	1-519-757-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC801	8-752-858-12	IC CXP82316-063Q			
IC802	8-741-810-59	IC SBX1810-59 (IR)			
		< TRANSISTOR >			
Q801	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R800	1-249-433-11	CARBON 22K	5%	1/4W	
R802	1-249-441-11	CARBON 100K	5%	1/4W	
R804	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R805	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R806	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R807	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R808	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R809	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R810	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R811	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R812	1-249-415-11	CARBON 680	5%	1/4W	F
R813	1-249-417-11	CARBON 1K	5%	1/4W	F
R814	1-249-419-11	CARBON 1.5K	5%	1/4W	F
R815	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R816	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R817	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R818	1-249-431-11	CARBON 15K	5%	1/4W	
R819	1-249-415-11	CARBON 680	5%	1/4W	F
R820	1-249-417-11	CARBON 1K	5%	1/4W	F
R821	1-249-419-11	CARBON 1.5K	5%	1/4W	F
R822	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R823	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R824	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R825	1-249-431-11	CARBON 15K	5%	1/4W	
R826	1-249-415-11	CARBON 680	5%	1/4W	F
R827	1-249-417-11	CARBON 1K	5%	1/4W	F
R828	1-249-419-11	CARBON 1.5K	5%	1/4W	F
R829	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R830	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R831	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R832	1-249-429-11	CARBON 10K	5%	1/4W	
R897	1-249-429-11	CARBON 10K	5%	1/4W	
R898	1-249-429-11	CARBON 10K	5%	1/4W	
R899	1-249-429-11	CARBON 10K	5%	1/4W	
		< SWITCH >			
S801	1-554-118-00	SWITCH, PUSH (1 KEY)(POWER)			
S803	1-554-303-21	SWITCH, TACTILE (PLAY ▶)			
S804	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE ⏏)			
S805	1-554-303-21	SWITCH, TACTILE (STOP ■)			
S806	1-554-303-21	SWITCH, TACTILE (⏮)			
S807	1-554-303-21	SWITCH, TACTILE (▶▶⏭)			
S808	1-554-303-21	SWITCH, TACTILE (▶▶)			
S809	1-554-303-21	SWITCH, TACTILE (◀◀)			
S810	1-554-303-21	SWITCH, TACTILE (PAUSE ❚❚)			
S813	1-554-303-21	SWITCH, TACTILE (11)			
S814	1-554-303-21	SWITCH, TACTILE (16)			
S815	1-554-303-21	SWITCH, TACTILE (17)			
S816	1-554-303-21	SWITCH, TACTILE (12)			
S817	1-554-303-21	SWITCH, TACTILE (7)			
S818	1-554-303-21	SWITCH, TACTILE (A-B)			
S819	1-554-303-21	SWITCH, TACTILE (REPEAT)			
S820	1-554-303-21	SWITCH, TACTILE (TIME)			
S822	1-554-303-21	SWITCH, TACTILE (1)			
S824	1-554-303-21	SWITCH, TACTILE (6)			
S825	1-554-303-21	SWITCH, TACTILE (2)			
S898	1-762-234-11	SWITCH, SLIDE (AUTO CUE/PAUSE)			
S899	1-570-157-51	SWITCH, SLIDE (TIMER)			
		< VIBRATOR >			
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
**********					
*	A-4673-881-A	DISP-2 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN804	1-750-185-11	CONNECTOR, BOARD TO BOARD 4P			

REF.No.	Part No.	Description			Remark
		< RESISTOR >			
R834	1-249-415-11	CARBON 680	5%	1/4W	F
R835	1-249-417-11	CARBON 1K	5%	1/4W	F
R836	1-249-419-11	CARBON 1.5K	5%	1/4W	F
R837	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R838	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R839	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R840	1-249-431-11	CARBON 15K	5%	1/4W	
R841	1-249-415-11	CARBON 680	5%	1/4W	F
R842	1-249-417-11	CARBON 1K	5%	1/4W	F
R843	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R844	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R845	1-249-427-11	CARBON 6.8K	5%	1/4W	F
R846	1-249-431-11	CARBON 15K	5%	1/4W	
R847	1-249-415-11	CARBON 680	5%	1/4W	F
R848	1-249-417-11	CARBON 1K	5%	1/4W	F
R896	1-249-419-11	CARBON 1.5K	5%	1/4W	F
		< SWITCH >			
S826	1-554-303-21	SWITCH, TACTILE (19)			
S827	1-554-303-21	SWITCH, TACTILE (14)			
S828	1-554-303-21	SWITCH, TACTILE (9)			
S829	1-554-303-21	SWITCH, TACTILE (4)			
S830	1-554-303-21	SWITCH, TACTILE (3)			
S831	1-554-303-21	SWITCH, TACTILE (8)			
S832	1-554-303-21	SWITCH, TACTILE (13)			
S833	1-554-303-21	SWITCH, TACTILE (18)			
S834	1-554-303-21	SWITCH, TACTILE (FADER)			
S835	1-554-303-21	SWITCH, TACTILE (CLEAR)			
S836	1-554-303-21	SWITCH, TACTILE (CHECK)			
S837	1-554-303-21	SWITCH, TACTILE (5)			
S838	1-554-303-21	SWITCH, TACTILE (10)			
S839	1-554-303-21	SWITCH, TACTILE (15)			
S840	1-554-303-21	SWITCH, TACTILE (20)			
S841	1-554-303-21	SWITCH, TACTILE (CONTINUE)			
S842	1-554-303-21	SWITCH, TACTILE (SHUFFLE)			
S843	1-554-303-21	SWITCH, TACTILE (PROGRAM)			
S897	1-554-303-21	SWITCH, TACTILE (>20)			
**********					
*	1-659-663-11	HEADPHONE BOARD **********			
		< CAPACITOR >			
C471	1-162-294-31	CERAMIC	0.001uF	10%	50V
C571	1-162-294-31	CERAMIC	0.001uF	10%	50V
C752	1-164-159-11	CERAMIC	0.1uF		50V
		< JACK >			
J751	1-770-307-11	JACK (LARGE TYPE)(PHONES)			

REF.No.	Part No.	Description			Remark
**********					
*	1-646-970-11	LOADING BOARD **********			
		< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)			
**********					
*	A-4673-878-A	MAIN BOARD, COMPLETE **********			
	7-682-548-04	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C301	1-164-159-11	CERAMIC	0.1uF		50V
C303	1-162-306-11	CERAMIC	0.01uF	30%	16V
C304	1-161-494-00	CERAMIC	0.022uF		25V
C305	1-164-159-11	CERAMIC	0.1uF		50V
C306	1-126-962-11	ELECT	3.3uF	20%	50V
C353	1-162-290-31	CERAMIC	470PF	10%	50V
C356	1-164-159-11	CERAMIC	0.1uF		50V
C357	1-162-208-31	CERAMIC	24PF	5%	50V
C358	1-102-508-91	CERAMIC	10PF	0.5PF	50V
C359	1-102-508-91	CERAMIC	10PF	0.5PF	50V
C360	1-130-495-00	MYLAR	0.1uF	5%	50V
C361	1-126-063-11	ELECT	100uF	20%	50V
C392	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-104-665-11	ELECT	100uF	20%	16V
C402	1-164-159-11	CERAMIC	0.1uF		50V
C403	1-124-122-11	ELECT	100uF	20%	50V
C404	1-130-495-00	MYLAR	0.1uF	5%	50V
C405	1-130-495-00	MYLAR	0.1uF	5%	50V
C406	1-130-495-00	MYLAR	0.1uF	5%	50V
C407	1-130-495-00	MYLAR	0.1uF	5%	50V
C408	1-164-159-11	CERAMIC	0.1uF		50V
C409	1-107-611-11	MICA	100PF	5%	500V
C410	1-102-816-00	CERAMIC	120PF	5%	50V
C411	1-102-816-00	CERAMIC	120PF	5%	50V
C412	1-106-343-00	MYLAR	1000PF	5%	200V
C413	1-130-484-00	MYLAR	0.012uF	5%	50V
C414	1-136-850-11	FILM	0.1uF	5%	63V
C415	1-124-918-11	ELECT	47uF	20%	63V
C501	1-104-665-11	ELECT	100uF	20%	16V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C503	1-124-122-11	ELECT	100uF	20%	50V
C504	1-130-495-00	MYLAR	0.1uF	5%	50V

MAIN

REF.No.	Part No.	Description			Remark
C505	1-130-495-00	MYLAR	0.1uF	5%	50V
C506	1-130-495-00	MYLAR	0.1uF	5%	50V
C507	1-130-495-00	MYLAR	0.1uF	5%	50V
C508	1-164-159-11	CERAMIC	0.1uF		50V
C509	1-107-611-11	MICA	100PF	5%	500V
C510	1-102-816-00	CERAMIC	120PF	5%	50V
C511	1-102-816-00	CERAMIC	120PF	5%	50V
C512	1-106-343-00	MYLAR	1000PF	5%	200V
C513	1-130-484-00	MYLAR	0.012uF	5%	50V
C514	1-136-850-11	FILM	0.1uF	5%	63V
C515	1-124-918-11	ELECT	47uF	20%	63V
C910	1-107-611-11	MICA	100PF	5%	500V
C911	1-124-572-11	ELECT	100uF	20%	63V
C915	1-124-907-11	ELECT	10uF	20%	50V
C920	1-162-294-31	CERAMIC	0.001uF	10%	50V
C921	1-126-962-11	ELECT	3.3uF	20%	50V
C922	1-164-159-11	CERAMIC	0.1uF		50V
C923	1-161-494-00	CERAMIC	0.022uF		25V
C930	1-124-360-00	ELECT	1000uF	20%	16V
C931	1-124-523-11	ELECT	4700uF	20%	16V
C932	1-104-665-11	ELECT	100uF	20%	16V
C935	1-124-910-11	ELECT	47uF	20%	50V
C937	1-136-850-11	FILM	0.1uF	5%	63V
C939	1-124-916-11	ELECT	22uF	20%	63V
C941	1-126-052-11	ELECT	100uF	20%	50V
C942	1-124-120-11	ELECT	220uF	20%	25V
C943	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
CN301	1-750-428-11	CONNECTOR, FFC/FPC 23P			
CN302	1-750-426-11	CONNECTOR, FFC/FPC 21P			
* CN304	1-750-416-11	CONNECTOR, FFC/FPC 11P			
CN951	1-564-510-11	PLUG, CONNECTOR 7P			
		< DIODE >			
D301	8-719-109-82	DIODE RD4.7ES-B3			
D302	8-719-987-63	DIODE 1N4148M			
D303	8-719-987-63	DIODE 1N4148M			
D910	8-719-200-82	DIODE 11ES2			
D911	8-719-987-63	DIODE 1N4148M			
D912	8-719-113-76	DIODE RD27ES-T2B2			
D930	8-719-210-21	DIODE 11EQS04			
D931	8-719-210-21	DIODE 11EQS04			
D932	8-719-210-21	DIODE 11EQS04			
D933	8-719-210-21	DIODE 11EQS04			
D934	8-719-987-63	DIODE 1N4148M			
D935	8-719-109-82	DIODE RD4.7ES-B3			
D936	8-719-987-63	DIODE 1N4148M			
D937	8-719-114-30	DIODE RD5.1JS-B2			
		< GROUND TERMINAL >			
EB601	1-537-770-21	TERMINAL BOARD, GROUND			

REF.No.	Part No.	Description	Remark
		< IC >	
IC301	8-759-822-09	IC LB1641	
IC303	8-759-370-62	IC CXD8505BQ	
IC304	8-759-710-59	IC NJM4580D-D	
IC305	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
IC401	8-759-971-80	IC AD712JN	
IC501	8-759-971-80	IC AD712JN	
IC920	8-759-636-16	IC M51957AL	
IC930	8-759-710-59	IC NJM4580D-D	
IC931	8-759-710-59	IC NJM4580D-D	
		< JACK >	
J501	1-766-507-11	JACK, PIN 2P (ANALOG LINE OUT)	
		< COIL >	
L301	1-410-322-11	INDUCTOR 3.3uH	
L302	1-410-322-11	INDUCTOR 3.3uH	
L303	1-410-503-11	INDUCTOR 3.3uH	
		< TRANSISTOR >	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q401	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q403	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q404	8-729-900-65	TRANSISTOR DTA144ES	
Q501	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q503	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q504	8-729-900-65	TRANSISTOR DTA144ES	
Q910	8-729-019-64	TRANSISTOR 2SB1041	
Q911	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q920	8-729-900-89	TRANSISTOR DTC144ES	
Q930	8-729-104-18	TRANSISTOR 2SC3514-Q	
Q931	8-729-900-89	TRANSISTOR DTC144ES	
Q932	8-729-900-65	TRANSISTOR DTA144ES	
Q933	8-729-021-82	TRANSISTOR 2SD2396K	
		< RESISTOR >	
R300	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R301	1-249-417-11	CARBON 1K 5% 1/4W	F
R302	1-249-417-11	CARBON 1K 5% 1/4W	F
R303	1-249-417-11	CARBON 1K 5% 1/4W	F
R304	1-249-417-11	CARBON 1K 5% 1/4W	F
R305	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R306	1-247-895-00	CARBON 470K 5% 1/4W	
R308	1-249-429-11	CARBON 10K 5% 1/4W	
R312	1-249-417-11	CARBON 1K 5% 1/4W	F
R313	1-249-409-11	CARBON 220 5% 1/4W	F
R314	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R317	1-249-441-11	CARBON 100K 5% 1/4W	
R395	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R401	1-249-435-11	CARBON 33K 5% 1/4W	
R402	1-249-435-11	CARBON 33K 5% 1/4W	

REF.No.	Part No.	Description			Remark
R403	1-249-435-11	CARBON 33K	5%	1/4W	
R404	1-249-435-11	CARBON 33K	5%	1/4W	
R405	1-249-432-11	CARBON 18K	5%	1/4W	
R406	1-249-432-11	CARBON 18K	5%	1/4W	
R407	1-249-433-11	CARBON 22K	5%	1/4W	
R408	1-249-433-11	CARBON 22K	5%	1/4W	
R409	1-247-830-11	CARBON 910	5%	1/4W	
R410	1-249-420-11	CARBON 1.8K	5%	1/4W	F
R411	1-247-891-00	CARBON 330K	5%	1/4W	
R412	1-249-409-11	CARBON 220	5%	1/4W	F
R413	1-249-409-11	CARBON 220	5%	1/4W	F
R414	1-249-393-11	CARBON 10	5%	1/4W	F
R415	1-249-409-11	CARBON 220	5%	1/4W	F
R417	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R418	1-249-441-11	CARBON 100K	5%	1/4W	
R419	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R420	1-247-826-00	CARBON 620	5%	1/4W	
R451	1-249-435-11	CARBON 33K	5%	1/4W	
R452	1-249-435-11	CARBON 33K	5%	1/4W	
R453	1-249-429-11	CARBON 10K	5%	1/4W	
R454	1-249-435-11	CARBON 33K	5%	1/4W	
R455	1-249-402-11	CARBON 56	5%	1/4W	F
R501	1-249-435-11	CARBON 33K	5%	1/4W	
R502	1-249-435-11	CARBON 33K	5%	1/4W	
R503	1-249-435-11	CARBON 33K	5%	1/4W	
R504	1-249-435-11	CARBON 33K	5%	1/4W	
R505	1-249-432-11	CARBON 18K	5%	1/4W	
R506	1-249-432-11	CARBON 18K	5%	1/4W	
R507	1-249-433-11	CARBON 22K	5%	1/4W	
R508	1-249-433-11	CARBON 22K	5%	1/4W	
R509	1-247-830-11	CARBON 910	5%	1/4W	
R510	1-249-420-11	CARBON 1.8K	5%	1/4W	F
R511	1-247-891-00	CARBON 330K	5%	1/4W	
R512	1-249-409-11	CARBON 220	5%	1/4W	F
R513	1-249-409-11	CARBON 220	5%	1/4W	F
R514	1-249-393-11	CARBON 10	5%	1/4W	F
R515	1-249-409-11	CARBON 220	5%	1/4W	F
R517	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R518	1-249-441-11	CARBON 100K	5%	1/4W	
R519	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R520	1-247-826-00	CARBON 620	5%	1/4W	
R541	1-249-435-11	CARBON 33K	5%	1/4W	
R542	1-249-435-11	CARBON 33K	5%	1/4W	
R543	1-249-429-11	CARBON 10K	5%	1/4W	
R544	1-249-435-11	CARBON 33K	5%	1/4W	
R545	1-249-402-11	CARBON 56	5%	1/4W	F
R910	1-249-390-11	CARBON 5.6	5%	1/4W	F
R911	1-249-390-11	CARBON 5.6	5%	1/4W	F
R912	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R913	1-249-423-11	CARBON 3.3K	5%	1/4W	F

REF.No.	Part No.	Description			Remark
R915	1-249-429-11	CARBON 10K	5%	1/4W	
R916	1-249-438-11	CARBON 56K	5%	1/4W	
R920	1-249-436-11	CARBON 39K	5%	1/4W	
R921	1-249-431-11	CARBON 15K	5%	1/4W	
R922	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R930	1-249-411-11	CARBON 330	5%	1/4W	
R931	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R932	1-249-436-11	CARBON 39K	5%	1/4W	
R933	1-247-807-31	CARBON 100	5%	1/4W	
R934	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R935	1-249-422-11	CARBON 2.7K	5%	1/4W	F
R937	1-249-417-11	CARBON 1K	5%	1/4W	F
R938	1-247-807-31	CARBON 100	5%	1/4W	
R940	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R941	1-249-428-11	CARBON 8.2K	5%	1/4W	F
R942	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R943	1-249-425-11	CARBON 4.7K	5%	1/4W	F

< VIBRATOR >

X301 1-579-161-11 VIBRATOR, CRYSTAL (45MHz)

****

* 1-660-405-11 TR BOARD
****

< TRANSISTOR >

Q999 8-729-021-82 TRANSISTOR 2SD2396K

< RESISTOR >

R998	1-247-807-31	CARBON 100	5%	1/4W	
R999	1-249-425-11	CARBON 4.7K	5%	1/4W	F

****

* 1-659-665-11 TRANS BOARD
****

< CAPACITOR >

C901 1-164-159-11 CERAMIC 0.1uF 50V

< CONNECTOR >

CN901 1-580-230-11 PIN, CONNECTOR (PC BOARD) 2P

****

* 1-659-668-11 VR BOARD
****

< CONNECTOR >

CN703 1-750-452-11 CONNECTOR, FFC/FPC 11P

VR **XLR**

REF.No.	Part No.	Description				Remark
		< VARIABLE RESISTOR >				
RV701	1-225-217-11	RES, VAR, CARBON 10K/10K (PHONES LEVEL)				
**********						
*	A-4673-883-A	XLR BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C397	1-124-273-00	ELECT	3.3uF	20%	50V	
C398	1-136-165-00	FILM	0.1uF	5%	50V	
C399	1-136-165-00	FILM	0.1uF	5%	50V	
C495	1-126-051-11	ELECT	47uF	20%	50V	
C496	1-107-597-11	CERAMIC	22PF	10%	500V	
C497	1-107-597-11	CERAMIC	22PF	10%	500V	
C498	1-126-024-11	ELECT	220uF	20%	25V	
C499	1-126-024-11	ELECT	220uF	20%	25V	
C595	1-126-051-11	ELECT	47uF	20%	50V	
C596	1-107-597-11	CERAMIC	22PF	10%	500V	
C597	1-107-597-11	CERAMIC	22PF	10%	500V	
C598	1-126-024-11	ELECT	220uF	20%	25V	
C599	1-126-024-11	ELECT	220uF	20%	25V	
		< CONNECTOR >				
* CN399	1-564-507-11	PLUG, CONNECTOR 4P				
CN999	1-564-506-11	PLUG, CONNECTOR 3P				
		< DIODE >				
D394	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC498	8-759-981-96	IC RC4560D				
IC499	8-759-981-96	IC RC4560D				
IC598	8-759-981-96	IC RC4560D				
IC599	8-759-981-96	IC RC4560D				
		< JACK >				
J399	1-750-785-11	CONNECTOR (XLR TYPE) 3P (ANALOG LINE OUT CH-1(L), CH-2(R))				
		< TRANSISTOR >				
Q398	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q399	8-729-620-05	TRANSISTOR 2SC2603-EF				
		< RESISTOR >				
R394	1-249-429-11	CARBON 10K	5%	1/4W		
R396	1-249-429-11	CARBON 10K	5%	1/4W		
R397	1-249-421-11	CARBON 2.2K	5%	1/4W	F	
R398	1-249-425-11	CARBON 4.7K	5%	1/4W	F	
R399	1-249-433-11	CARBON 22K	5%	1/4W		

REF.No.	Part No.	Description			Remark
R483	1-249-429-11	CARBON 10K	5%	1/4W	
R486	1-249-417-11	CARBON 1K	5%	1/4W	F
R487	1-249-417-11	CARBON 1K	5%	1/4W	F
R488	1-249-429-11	CARBON 10K	5%	1/4W	
R489	1-247-883-00	CARBON 150K	5%	1/4W	
R490	1-249-429-11	CARBON 10K	5%	1/4W	
R491	1-249-429-11	CARBON 10K	5%	1/4W	
R492	1-249-435-11	CARBON 33K	5%	1/4W	
R493	1-249-433-11	CARBON 22K	5%	1/4W	
R494	1-249-407-11	CARBON 150	5%	1/4W	F
R495	1-249-407-11	CARBON 150	5%	1/4W	F
R496	1-249-429-11	CARBON 10K	5%	1/4W	
R497	1-249-429-11	CARBON 10K	5%	1/4W	
R498	1-249-441-11	CARBON 100K	5%	1/4W	
R499	1-249-441-11	CARBON 100K	5%	1/4W	
R583	1-249-429-11	CARBON 10K	5%	1/4W	
R586	1-249-417-11	CARBON 1K	5%	1/4W	F
R587	1-249-417-11	CARBON 1K	5%	1/4W	F
R588	1-249-429-11	CARBON 10K	5%	1/4W	
R589	1-247-883-00	CARBON 150K	5%	1/4W	
R590	1-249-429-11	CARBON 10K	5%	1/4W	
R591	1-249-429-11	CARBON 10K	5%	1/4W	
R592	1-249-435-11	CARBON 33K	5%	1/4W	
R593	1-249-433-11	CARBON 22K	5%	1/4W	
R594	1-249-407-11	CARBON 150	5%	1/4W	F
R595	1-249-407-11	CARBON 150	5%	1/4W	F
R596	1-249-429-11	CARBON 10K	5%	1/4W	
R597	1-249-429-11	CARBON 10K	5%	1/4W	
R598	1-249-441-11	CARBON 100K	5%	1/4W	
R599	1-249-441-11	CARBON 100K	5%	1/4W	
		< VARIABLE RESISTOR >			
RV499	1-223-877-11	RES, VAR, CARBON 10K (ANALOG LINE OUT LEVEL CH-1(L))			
RV599	1-223-877-11	RES, VAR, CARBON 10K (ANALOG LINE OUT LEVEL CH-2(R))			
		< RELAY >			
RY499	1-755-061-11	RELAY			
RY599	1-755-061-11	RELAY			
**********					
		MISCELLANEOUS			
		**********			
3	1-696-760-11	WIRE (FLAT TYPE)(23 CORE)			
16	1-776-999-11	CORD (WITH CONNECTOR)			
62	1-751-712-11	WIRE (FLAT TYPE)(11 CORE)			
68	1-751-713-11	WIRE (FLAT TYPE)(21 CORE)			
113	1-452-824-11	MAGNET			

REF.No.	Part No.	Description	Remark
⚠151	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N	
152	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
FL801	1-519-757-11	INDICATOR TUBE, FLUORESCENT	
⚠*IL901	1-580-375-21	INLET 3P (~ AC IN)	
J751	1-770-307-11	JACK (LARGE TYPE)(PHONES)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
Q933	8-729-021-82	TRANSISTOR 2SD2396K	
RV701	1-225-217-11	RES, VAR, CARBON 10K/10K (PHONES LEVEL)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	
⚠T901	1-429-487-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-429-488-11	TRANSFORMER, POWER (AEP,UK)	
**********			
		ACCESSORIES & PACKING MATERIALS **********	
	1-473-546-11	REMOTE COMMANDER (RM-DL3)	
⚠	1-551-812-11	CORD, POWER (US,CND)	
⚠	1-590-910-11	CORD SET, POWER (AEP,UK)	
	1-590-925-31	CORD, CONNECTION (AUDIO 100cm)	
	2-297-913-00	WASHER (DIA.5), ORNAMENTAL	
	3-810-743-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN)	
	4-941-762-11	COVER (MLY), BATTERY (for RM-DL3)	
*	4-941-925-02	CUSHION	
*	4-980-081-01	PLATE (RACK), ORNAMENTAL	
*	4-980-257-01	RACK (L/R)	
*	4-980-826-11	CARTON, INDIVIDUAL	
	7-682-276-04	SCREW +RK 5X12	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

REF.No.	Part No.	Description	Remark
**********			
		HARDWARE LIST **********	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#3	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#4	7-621-255-15	SCREW +P 2X3	
#5	7-682-548-04	SCREW +BVTT 3X8 (S)	
#6	7-682-961-01	SCREW +PSW 4X8	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

9-960-476-11

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

English
96B090410-1
Printed in Japan
© 1996. 2
Published by Home A&V Products Div.
Quality Engineering Dept.